

Treatment of Serious Mental Illness in Medical and Mental Health Settings

Scott Wetzler, Ph.D., Bruce Schwartz, M.D., Sara Wetzler, Urvashi Patel, Ph.D., Nathaniel Counts, J.D.

Objective: This study investigated service use by individuals with serious and nonserious mental illness receiving mental health care in medical and mental health settings.

Methods: Claims data from the New York State Medicaid Data Warehouse were examined for 8,988 patients who received at least one mental health service at an urban academic medical center during 2017 at a mental health setting, a medical setting, or both.

Results: Most patients (59%) received all of their mental health care in medical settings and from unaffiliated providers, including a large portion (16%) with serious mental illness. Despite the availability of integrated care in the medical setting and use of unaffiliated mental health providers, rates of mental health inpatient admissions were high among all patients in this setting (including those with

serious and with nonserious mental illness), considerably higher than for patients treated in a mental health clinic within the system. Rates of medical and substance abuse inpatient admissions were also much higher for patients treated in the medical setting and by unaffiliated providers, compared with those treated in the system's mental health clinics.

Conclusions: Findings suggest that when mental health services are available in medical and mental health settings within the same system, either patients with more severe physical illnesses are more likely to receive their mental health care in medical settings and from unaffiliated providers and thus have more hospitalizations of all types or affiliated mental health settings more effectively address clinical needs and thus reduce hospitalizations.

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Because mental health services are not available in many communities, primary care physicians and medical clinics provide the majority of mental health services and psychotropic prescriptions to their patients (1). Although primary care providers may increase screening and treatment for patients without serious mental illness, there is a question as to whether they have the training and resources to care for the mental health needs of individuals with serious mental illness (2). For this reason, integrated mental health care models, in particular the collaborative care model, have been developed (3–6) to provide greater access to mental health care and improve coordination between mental health care and general medical care.

These integrated care models have been disseminated widely (7, 8) and approved for reimbursement (9), including many that specifically target populations with serious mental illness (10). Starting with the IMPACT model, many studies have demonstrated that integrated mental health services improve effectiveness and efficiency of treatment, including improvement in outcomes of both general medical and mental and substance use disorders and reduced costs for patients with major depression

(11–14). Although the effectiveness of integrated care is well established, less information is available about patterns of utilization when both integrated care models and specialty mental health care models are available within a

HIGHLIGHTS

- When mental health care is available within a single system both in specialty care settings and in integrated models in medical clinics, a high volume of patients with serious mental illness received mental health care in medical clinics.
- At an academic medical center, Medicaid patients treated in mental health specialty clinics had many fewer inpatient admissions for mental health, substance use, and medical reasons, compared with patients treated in medical clinics with integrated care resources and unaffiliated providers.
- The difference in inpatient admissions may result from differences in patient characteristics or variations in the care settings, which is an area for future research.

single health care system and about which patients receive care in either setting.

A four-quadrant clinical integration model has been proposed to better stratify patients on the basis of their relative levels of need for general medical or mental health care, from low need for either general medical or mental health care in quadrant I to high need for both types of care in quadrant IV (15). This model would suggest that integrated care should be used for patients in quadrants I and III—those with low mental health needs and low or high levels of general medical needs—but that the model might not be as appropriate as specialty care for quadrants II and IV—those with serious mental illness. This study sought to provide additional information about differences in patients served in integrated care and specialty care models and their rates of hospitalization.

Montefiore Medical Center, in the Bronx, New York, is an academic medical center with an extensive primary care network of 21 medical clinics, where integrated mental health care models have been implemented, and three large specialty mental health clinics (under the direction of a Department of Psychiatry). In the medical clinic settings, a colocated, integrated care model is used in which some of the mental health care is delivered by the primary care physician, some is delivered by the embedded mental health professional (including psychiatrists, psychologists, and social workers), and some is delivered by mental health providers unaffiliated with the academic medical center. Some patients with more serious mental illness are identified in the medical clinic setting and referred to the Montefiore-affiliated mental health specialty clinic setting, although some patients do not follow through with the referral.

This network of mental health services allowed us to make a naturalistic comparison of patterns of service use for three groups of patients with diagnoses of mental disorders: patients who received mental health treatment in the primary care setting only from primary care physicians or embedded mental health professionals (and unaffiliated mental health providers); patients who received mental health treatment in the specialty mental health clinic setting; and patients who received mental health treatment in both settings. Using data from the New York State Medicaid Data Warehouse (MDW), it was possible to compare the subgroups, examining differences in diagnoses and medical severity and patterns of utilization of general medical and mental health services. This analysis might shed light on how care in different settings can be better targeted to meet specific general medical and mental health care needs of various patients.

METHODS

The Population Health Analytics team for Montefiore Medical Center has access to the MDW as part of a data use agreement with the New York State Department of Health (approved by the Albert Einstein College of Medicine

Institutional Review Board). This access allows the data team to view all Medicaid claims for defined populations and conduct analyses on aggregated data such that no protected health information is extracted or transmitted. The analysis reported here included patients ages 18–65 who had a Medicaid claim at a Montefiore outpatient clinic in which the principal diagnosis involved a mental disorder (diagnoses of organic mental syndromes or dementias were not included nor were secondary diagnoses) and in which the service was provided between January 1, 2017 and December 31, 2017. Conducting this analysis in March 2019 allowed for 14–26 months of claims lag to ensure completeness. Patients with dual Medicare coverage, who had services covered by the New York State Office for People With Developmental Disabilities, by an HIV special needs plan, or by Supplemental Security Income were excluded, as were patients with commercial insurance coverage.

The remaining 8,988 unique adult patients had either basic Medicaid coverage (N=5,289) or HARP Medicaid coverage (N=3,699). HARP is a special Medicaid managed care program in New York for people with serious mental illness or substance use disorders that offers enhanced care management and support services. Patients were then grouped according to whether all of their mental health services at Montefiore were provided in a medical clinic (N=5,342), all of their mental health services at Montefiore were provided in a specialized mental health clinic (N=3,000), or whether their mental health services at Montefiore were provided in both the medical and the mental health settings (N=646).

An analysis of the prevalence of serious mental illness and patterns of utilization was then performed by classifying claims as outpatient or inpatient (for the purpose of this study all other claims were ignored). Outpatient services were further subdivided into general medical services provided by the primary care physician, mental health services provided by the primary care physician, mental health services provided by a mental health specialist in the primary care setting or mental health services provided by a mental health specialist (i.e., psychiatrist, psychologist, or social worker) in a specialty mental health setting, and specialized medical services. On the basis of the principal inpatient discharge diagnosis, inpatient services were divided into general medical, mental health, and substance use episodes of care. To differentiate between severity of mental health needs, patients were classified as having serious mental illness, on the basis of the diagnostic classification of the majority of their outpatient claims as schizophrenia, delusional or other psychotic disorders, and bipolar disorders; all other patients were classified as having nonserious mental illness (including patients with major depression). As another way of approximating severity of need, aside from diagnostic categories, patients were classified as regular Medicaid or HARP, because serious mental illness and high service utilization are qualifying conditions for HARP eligibility. Severity of general medical illness was assessed with the

TABLE 1. Characteristics of Medicaid patients, by the setting where they received mental health services

| Characteristic | Overall (N=8,988) | | Mental health clinic only (N=3,000) | | Medical clinic only (N=5,342) | | | Mental health and medical clinic (N=646) | | |
|-------------------------------|----------------------|----|--|----|----------------------------------|----|-------|--|----|-------|
| | N | % | N | % | N | % | p | N | % | p |
| CCI score (M±SD) ^a | 1.81±2.48 | | 1.85±2.20 | | 1.79±2.65 | | .348 | 1.79±2.32 | | .536 |
| Age (M±SD) | 39.9±13.6 | | 43.5±13.3 | | 38.0±13.4 | | <.001 | 39.4±13.8 | | <.001 |
| Gender | | | | | | | .001 | | | .154 |
| Female | 5,942 | 66 | 1,920 | 64 | 3,629 | 68 | | 393 | 61 | |
| Male | 3,046 | 34 | 1,080 | 36 | 1,713 | 32 | | 253 | 39 | |
| Medicaid coverage | | | | | | | <.001 | | | .671 |
| HARP | 3,699 | 41 | 1,812 | 60 | 1,491 | 28 | | 396 | 61 | |
| Basic | 5,289 | 59 | 1,188 | 40 | 3,851 | 72 | | 250 | 39 | |
| Serious mental illness | 2,333 | 26 | 1,153 | 38 | 864 | 16 | <.001 | 316 | 49 | <.010 |
| Substance use disorder | 459 | 5 | 226 | 8 | 193 | 4 | <.001 | 40 | 6 | .235 |

^aCCI, Charlson Comorbidity Index. Possible scores range from 0 to 33, with scores above 1 indicating increasing likelihood of next-year mortality.

Charlson Comorbidity Index (CCI) (16), which is based on a point scoring system (from 0 to 40) for the number and type of comorbid conditions. Although this metric was specifically developed to predict 1-year mortality, it is commonly used as an index of medical severity (17).

A regression model was constructed to compare outcomes (i.e., inpatient mental health, inpatient medical, and inpatient substance use utilization) across practice settings. The outcomes were modeled by using Poisson regression (for rare events), with practice setting as the main variable, controlling for CCI score (16, 17), age, gender, type of Medicaid coverage, serious mental illness, and substance use disorder diagnosis. Two additional models per outcome were run. The first tested the interaction between setting and serious mental illness, and the second tested the interaction between setting and Medicaid coverage. For all tests of significance, alpha was set to 0.05. All analyses were conducted with SAS E.G., version 7.1.

RESULTS

Table 1 shows that of the 8,988 patients in the sample of patients who accessed mental health services in our system of care, 59% (N=5,342) received those services in the medical clinic setting and from nonaffiliated providers and that only 7% (N=646) of patients received mental health services in both a medical and a mental health setting.

Most patients in the mental health clinic setting were covered by HARP (60%), with 38% diagnosed as having serious mental illness. In the medical clinic setting, only 28% were covered by HARP, and 16% were diagnosed as having serious mental illness. Nonetheless, a large number of HARP patients received mental health services only in the medical clinic setting or from unaffiliated providers (N=1,491). In the group that received services only in the mental health setting, patients were older on average and the proportion of males was higher than in the medical clinic only group. No differences between groups were observed for substance use disorder diagnoses. Although mean CCI scores were

comparable across groups, a regression analysis that controlled for age, gender, type of Medicaid coverage (HARP or basic), serious mental illness, and substance use disorder diagnosis found that compared with patients who received mental health services only in the mental health setting, those who received mental health services only in the medical setting had significantly higher CCI scores ($p<0.001$), as did those who received services in the both mental health and medical settings ($p<0.01$) (data not shown). Notably the mean CCI scores, all of which were greater than 1.5, indicate a high prevalence of one or more chronic general medical conditions across the study population.

Table 2 presents data on use of outpatient and inpatient services, stratified by setting and Medicaid coverage, among the patients with serious mental illness (N=2,333). Across all three types of hospitalization, the number of inpatient admissions per patient was five to six times higher in the group that received mental health services only in the medical setting, compared with the group that received mental health services only in the mental health setting. This difference was more pronounced among the patients covered by HARP, than among those covered by basic Medicaid. This difference was evident, even though patients in the medical setting-only group received a considerable amount of outpatient mental health services: 17.8 total mental health visits, including 4.0 with their primary care physician, 7.5 with an integrated care mental health provider, and 6.3 with a non-affiliated mental health specialist outside of the health system. Patients with serious mental illness in the mental health setting-only group had a total of 13.6 mental health visits. For patients with serious mental illness who received mental health services in both types of setting, the number of inpatient admissions per patient was three times higher than the number in the mental health setting-only group, and one-half the number in the medical setting-only group. Finally, patients with serious mental illness who received mental health care in the medical setting and from unaffiliated providers also had a greater number of medical

TABLE 2. Service use (mean number of visits) among Medicaid patients with serious mental illness (N=2,333), by the setting where they received mental health services and by type of Medicaid coverage

| Service | Mental health clinic only (N=1,153) | | | Medical clinic only (N=864) | | | Mental health and medical clinic (N=316) | | |
|--|--|------|-------------------|--------------------------------|------|-------------------|---|------|-------------------|
| | Total | HARP | Basic Medicaid | Total | HARP | Basic Medicaid | Total | HARP | Basic Medicaid |
| Outpatient visit | 38.7 | 42.2 | 27.0 | 50.9 | 60.1 | 25.3 | 41.9 | 46.0 | 30.9 |
| Mental health service provided by a primary care physician (PCP) | .7 | .7 | .7 | 4.0 | 4.5 | 2.4 | 2.0 | 2.1 | 1.6 |
| Mental health service provided in medical clinic | .8 | .8 | .8 | 7.5 | 9.1 | 3.2 | 4.8 | 5.5 | 2.7 |
| Mental health service provided in a mental health specialty clinic | 12.1 | 12.8 | 9.7 | 6.3 | 7.0 | 4.4 | 13.2 | 13.4 | 12.4 |
| Substance use service provided in a substance use specialty clinic | 12.6 | 14.2 | 7.2 | 11.1 | 13.6 | 3.9 | 6.1 | 7.6 | .7 |
| Medical service provided by a PCP in a medical clinic | 5.7 | 6.0 | 4.8 | 7.4 | 8.0 | 5.8 | 6.6 | 6.4 | 7.3 |
| Medical service provided by a medical specialist in a medical clinic | 6.8 | 7.7 | 3.8 | 14.6 | 17.9 | 5.6 | 9.2 | 11.0 | 6.2 |
| Inpatient admissions per patient | .33 | .33 | .30 | 1.87 | 2.37 | .58 | .96 | 1.05 | .64 |
| Medical | .14 | .15 | .12 | .64 | .78 | .25 | .32 | .35 | .23 |
| Mental health | .14 | .12 | .18 | .94 | 1.20 | .24 | .57 | .62 | .41 |
| Substance use disorder | .05 | .06 | .00 | .29 | .39 | .09 | .07 | .08 | .00 |

visits, especially specialty care, compared with patients who received mental health services only in the mental health setting.

Table 3 presents data on outpatient and inpatient utilization, stratified by setting and type of Medicaid coverage, among the patients with nonserious mental illness. Similar to the patients with serious mental illness, across all three types of hospitalization, the number of inpatient admissions per patient in the medical setting-only group was two to three times higher than in the mental health setting-only group—a difference primarily attributed to the HARP subgroup. In addition, the number of inpatient admissions per patient in the mixed mental health and medical setting group was higher than in the mental health setting-only group, in both the HARP and basic Medicaid subgroups. Furthermore, even though these patients had nonserious mental illnesses, they received a considerable amount of mental health care: 7.0 visits for the medical setting-only group, 10.8 visits for the mental health setting-only group, and 14.7 visits for the mixed mental health and medical setting group. This pattern was especially pronounced among the HARP patients, many of whom were eventually hospitalized.

Table 4 presents the regression analyses, which show significant main effects of clinical setting, serious mental illness, and type of Medicaid coverage (HARP or basic) for all three inpatient utilization outcomes (mental health, medical, and substance use admissions). The significant main-effect analyses indicated that patients in the mental health setting-only group had lower rates of the three types

of admissions, when the analysis controlled for differences in CCI, age, gender, type of Medicaid coverage, serious mental illness, and substance use disorder diagnosis. The interaction models for type of Medicaid coverage were significant for all three inpatient utilization outcomes. For the medical setting-only group, HARP eligibility predicted even greater inpatient utilization for all three types of admission. However, in the interaction models, serious mental illness was a significant predictor only of medical inpatient utilization—that is, patients with serious mental illness in the medical setting-only group had greater medical inpatient utilization than did patients in the mental health setting-only group.

DISCUSSION

The integrated care model was developed to address the problem of lack of access to mental health services and fragmentation of mental health and general medical care for individuals with mental disorders. In a large, urban academic medical center, patients had access to both integrated care and specialty mental health care. Examining data from a comprehensive Medicaid claims database, we found that most patients received all their mental health treatment in an outpatient medical setting or from nonaffiliated providers outside the health system, even though many of them had diagnoses of serious mental illness and were covered by HARP benefits. Both HARP patients and patients with serious mental illness (these two groups significantly

TABLE 3. Service use (mean number of visits) among Medicaid patients with nonserious mental illness (N=6,655), by the setting where they received mental health services and by type of Medicaid coverage

| Service | Mental health clinic only (N=1,847) | | | Medical clinic only (N=4,478) | | | Mental health and medical clinic (N=330) | | |
|--|--|------|-------------------|----------------------------------|------|-------------------|---|------|-------------------|
| | Total | HARP | Basic Medicaid | Total | HARP | Basic Medicaid | Total | HARP | Basic Medicaid |
| Outpatient visit | 37.8 | 46.7 | 27.6 | 30.6 | 68.9 | 20.9 | 42.6 | 55.1 | 30.9 |
| Mental health service provided by a primary care physician (PCP) | .6 | .6 | .6 | 2.9 | 3.9 | 2.7 | 1.8 | 2.0 | 1.6 |
| Mental health service provided in medical clinic | .5 | .3 | .6 | 2.4 | 5.1 | 1.8 | 2.9 | 4.0 | 1.8 |
| Mental health service provided in a mental health specialty clinic | 9.7 | 10.4 | 9.0 | 1.7 | 4.0 | 1.1 | 10.0 | 11.2 | 8.8 |
| Substance use service provided in a substance use specialty clinic | 12.1 | 17.1 | 6.3 | 6.5 | 24.1 | 2.1 | 8.9 | 13.6 | 4.5 |
| Medical service provided by a PCP in a medical clinic | 6.3 | 7.4 | 5.0 | 7.6 | 11.7 | 6.5 | 7.5 | 8.4 | 6.7 |
| Medical service provided by a medical specialist in a medical clinic | 8.5 | 10.8 | 6.0 | 9.5 | 20.3 | 6.7 | 11.6 | 16.0 | 7.4 |
| Inpatient admissions per patient | .30 | .36 | .23 | .62 | 1.99 | .28 | .71 | .97 | .46 |
| Medical | .22 | .25 | .18 | .42 | 1.13 | .25 | .45 | .60 | .31 |
| Mental health | .04 | .03 | .04 | .11 | .41 | .03 | .20 | .25 | .14 |
| Substance use | .05 | .08 | .00 | .09 | .45 | .00 | .06 | .12 | .01 |

overlapped) who received mental health services only in the medical setting received a considerable amount of mental health services (in fact, such patients received more mental health care than did their counterparts in the mental health setting-only group), with the primary care physician providing over 20% of the mental health services and the embedded mental health specialist and unaffiliated providers delivering the remainder of the mental health care. Despite the availability of so many integrated mental health care services and unaffiliated providers in the medical clinic setting, the rate of inpatient admissions across all types of hospitalization—mental health, medical, and substance use—was significantly higher for patients treated in the integrated care medical clinic setting, when the analysis controlled for medical complexity and presence of serious mental illness or substance use disorder diagnoses.

These findings suggest that because of differences in patient characteristics or in clinical setting characteristics that were not controlled for in these analyses, patients who received mental health services only in medical settings and from unaffiliated providers experienced higher rates of hospitalizations, compared with those who received mental health care in specialty mental health settings. In our system, only 7% of patients treated for a mental disorder received mental health services in both mental health and medical settings. This percentage also partially indicates the proportion of patients in the system who were successfully referred from a medical setting to a mental health setting, because these patients received services in both types of

setting in a single year. Those who received care in both settings had significantly lower rates of hospitalization, compared with the medical setting-only group, which may have resulted from several factors related to the patient and the clinical setting. Although the regression analyses controlled for case-mix differences between the clinical settings in terms of certain basic clinical and demographic parameters, other patient differences could explain the findings. Although the proportion of patients with serious mental illness was not larger in the medical setting-only group, compared with the mental health setting-only group, the fact that these patients did not seek care in or get referred for care to mental health specialty settings within the system suggests that they may be different from patients who seek care in mental health specialty settings within the system. In particular, patients with serious mental illness may have been less compliant with referrals within the system and may have been facing social and other barriers that led to increased hospitalizations.

In addition, although the mean CCI scores of patients in the medical setting-only group were comparable to those of patients in the mental health setting-only group, the age differences between patients in the two settings indicate that the medical setting-only group probably had more significant medical problems. Medical care providers may have selectively retained patients in the medical setting to manage the more severe medical problems, or patients with more severe medical disorders may have preferred to receive their mental health treatment in medical settings or remain with unaffiliated providers, either of which may also

TABLE 4. Regression analysis of variables as predictors of inpatient admissions among Medicaid patients receiving mental health services

| Variable | Mental health admission | | | | Medical admission | | | | Substance use disorder admission | | | |
|---|-------------------------|--------|------|-------|-------------------|--------|------|-------|----------------------------------|--------|-------|-------|
| | OR | 95% CI | | p | OR | 95% CI | | p | OR | 95% CI | | p |
| Setting of mental health services (reference: mental health setting only) | | | | | | | | | | | | |
| Medical setting only | 5.57 | 4.81 | 6.48 | <.001 | 2.40 | 2.18 | 2.65 | <.001 | 4.25 | 3.52 | 5.17 | <.001 |
| Medical and mental health settings | 3.87 | 3.21 | 4.66 | <.001 | 1.96 | 1.68 | 2.28 | <.001 | 1.28 | .88 | 1.81 | .181 |
| CCI score ^a | 1.02 | 1.00 | 1.04 | .080 | 1.25 | 1.24 | 1.27 | <.001 | 1.06 | 1.04 | 1.08 | <.001 |
| Age | .97 | .97 | .98 | <.001 | .98 | .98 | .99 | <.001 | 1.00 | .99 | 1.01 | .933 |
| Female (reference: male) | .69 | .63 | .77 | <.001 | 1.25 | 1.16 | 1.35 | <.001 | .21 | .18 | .25 | <.001 |
| HARP (reference basic Medicaid) | 6.68 | 5.76 | 7.77 | <.001 | 2.21 | 2.02 | 2.42 | <.001 | 44.53 | 30.05 | 69.35 | <.001 |
| Serious mental illness (reference: nonserious mental illness) | 3.08 | 2.74 | 3.45 | <.001 | .80 | .73 | .87 | <.001 | .76 | .66 | .88 | .940 |
| Substance use disorder (reference: none) | .55 | .71 | .41 | <.001 | .84 | .72 | .96 | .013 | 1.33 | 1.09 | 1.61 | <.010 |

^a CCI, Charlson Comorbidity Index.

explain the increased hospitalizations. The differences between the medical setting-only group and the mental health setting-only group in number of hospitalizations could also be a function of differences in the setting, because the specialty mental health clinics have more resources and supports targeted toward mental health than do the medical clinics. The differences could also be a function of challenges in coordinating mental health care between the medical setting and unaffiliated mental health providers. Qualitative research on integrated mental health care has identified some potential barriers to effective delivery, such as conflict over roles and responsibilities, that may partially explain differences in the observed outcomes (18).

In regard to the four-quadrant model, our study found that patients in all four quadrants had fewer hospitalizations if they were treated in a mental health specialty setting rather than in an integrated care setting supplemented by unaffiliated providers. This indicates that additional research is needed to understand what specific patient characteristics across the four quadrants make medical settings or specialty mental health care settings most appropriate within a system when both types of care are available. Such research would help identify which patients should be retained in medical settings supplemented by unaffiliated providers for a greater focus on managing their medical conditions and which patients warrant additional efforts to connect them to specialty mental health care clinics within the system, which may have greater resources for managing their mental health needs and which may face fewer barriers to care coordination across systems. Our findings suggest that the severity of a patient's mental health problems may not be the sole reason for connecting the patient to specialty care, as one might have expected.

A potential limitation of this study is that we used outpatient and inpatient utilization as proxies for the

effectiveness of treatment, but we did not have data on changes in clinical symptoms. Future studies should also examine the relationships between settings of care and clinical outcomes.

CONCLUSIONS

The study found that most mental health services at a large, urban, academic medical center were delivered in medical settings supplemented by unaffiliated providers, even for patients with serious mental illness, and that some patients are referred to and receive their care in specialty mental health settings within the system. Patients who received mental health care in the medical settings and from unaffiliated providers had higher rates of mental health, substance use, and medical hospitalizations when the analysis controlled for basic demographic, mental health, substance use, and medical characteristics. Undocumented patient characteristics may explain this disparity, although there may be intrinsic differences in how care is delivered in the various settings. Further research is needed to determine which models of mental health care best meet the needs of various patients.

AUTHOR AND ARTICLE INFORMATION

Department of Psychiatry and Behavioral Sciences (Scott Wetzler, Schwartz, Counts) and Department of Epidemiology and Population Health (Patel), Albert Einstein College of Medicine, Bronx, New York; Department of History and Science, Harvard University, Cambridge, Massachusetts (Sara Wetzler). Send correspondence to Scott Wetzler (swetzler@montefiore.org).

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REFERENCES

1. Olfson M, Kroenke K, Wang S, et al: Trends in office-based mental health care provided by psychiatrists and primary care physicians. *J Clin Psychiatry* 2014; 75:247–253
2. Ferenchick EK, Ramanuj P, Pincus HA: Depression in primary care: part 1. screening and diagnosis. *BMJ* 2019; 365:l794
3. Ramanuj P, Ferenchik E, Docherty M, et al: Evolving models of integrated behavioral health and primary care. *Curr Psychiatry Rep* 2019; 21:4
4. Unützer J, Katon W, Callahan CM, et al: Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *JAMA* 2002; 288:2836–2845
5. Huffman JC, Niazi SK, Rundell JR, et al: Essential articles on collaborative care models for the treatment of psychiatric disorders in medical settings: a publication by the academy of psychosomatic medicine research and evidence-based practice committee. *Psychosomatics* 2014; 55:109–122
6. Archer J, Bower P, Gilbody S, et al: Collaborative care for depression and anxiety problems. *Cochrane Database Syst Rev* 2012; 10:CD006525
7. Scharf DM, Eberhart NK, Hackbarth NS, et al: Evaluation of the SAMHSA Primary and Behavioral Health Care Integration (PBHCI) grant program: final report. *Rand Health Q* 2014; 4:6
8. Lewis VA, Colla CH, Tierney K, et al: Few ACOs pursue innovative models that integrate care for mental illness and substance abuse with primary care. *Health Aff* 2014; 33:1808–1816
9. Press MJ, Howe R, Schoenbaum M, et al: Medicare payment for behavioral health integration. *N Engl J Med* 2017; 376:405–407
10. Ramanuj PP, Talley R, Breslau J, et al: Integrating behavioral health and primary care services for people with serious mental illness: a qualitative systems analysis of integration in New York. *Community Ment Health J* 2018; 54:1116–1126
11. Hunkeler EM, Katon W, Tang L, et al: Long term outcomes from the IMPACT randomised trial for depressed elderly patients in primary care. *BMJ* 2006; 332:259–263
12. Woltmann E, Grogan-Kaylor A, Perron B, et al: Comparative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health care settings: systematic review and meta-analysis. *Am J Psychiatry* 2012; 169:790–804
13. Druss BG, Mauer BJ: Health care reform and care at the behavioral health–primary care interface. *Psychiatr Serv* 2010; 61:1087–1092
14. Druss BG, Goldman HH: Integrating health and mental health services: a past and future history. *Am J Psychiatry* 2018; 175:1199–1204
15. Mauer B: Behavioral Health/Primary Care Integration and the Person-Centered Healthcare Home. Washington, DC, National Council for Community Behavioral Healthcare, 2009. <https://www.integration.samhsa.gov/BehavioralHealthandPrimaryCareIntegrationandthePCMH-2009.pdf>
16. Charlson ME, Pompei P, Ales KL, et al: A new method of classifying prognostic comorbidity in longitudinal studies: development and validation. *J Chronic Dis* 1987; 40:373–383
17. Quan H, Li B, Couris CM, et al: Updating and validating the Charlson Comorbidity Index and score for risk adjustment in hospital discharge abstracts using data from 6 countries. *Am J Epidemiol* 2011; 173:676–682
18. Supper I, Catala O, Lustman M, et al: Interprofessional collaboration in primary health care: a review of facilitators and barriers perceived by involved actors. *J Public Health* 2015; 37:716–727